



SEQUENCE LISTING

<110> Chatfield, Steven N
Dougan, Gordon
Sydenham, Mark

<120> Vaccines Containing Attenuated Bacteria

<130> KC01003US

<140> US 09/591,447

<141> 2001-06-09

<150> UK 9726233.1

<151> 1997-12-11

<160> 4

<170> MS-DOS

<210> 1

<211> 1287

<212> DNA

<213> Salmonella typhimurium

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420

RECEIVED

JAN 18 2002

TECH CENTER 1600/2900

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<212> PRT

<213> Salmonella typhimurium

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 50          55          60

Thr Leu Arg His Gln Ile Leu Glu Arg Leu Ile Met Asp Gln Ile Ile
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Leu Gln Met Gly Gln Lys Met Gly Val Lys Ile Thr Asp Glu Gln Leu
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Asp Gln Pro Ser Ala Asn Ile Ala Lys Gln Asn Asn Met Thr Met Asp
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Gln Met Arg Ser Arg Leu Ala Tyr Asp Gly Leu Asn Tyr Ser Thr Tyr
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Ser His Ile Leu Ile Ala Leu Pro Glu Asn Pro Thr Ser Glu Gln Val
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Asn Asp Ala Gln Arg Gln Ala Glu Ser Ile Val Glu Glu Ala Arg Asn
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Ala Leu Lys Gly Gly Gln Met Gly Trp Gly Arg Ile Gln Glu Leu Pro

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Leu Arg Gly Gln	Ser Gln Ser Ile	Ser Val Thr Glu	Val His Ala Arg			
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His Ile Leu Leu	Lys Pro Ser Pro	Ile Met Asn Asp	Gln Gln Ala Arg			
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Leu Lys Leu Glu	Glu Ile Ala Ala	Asp Ile Lys Ser	Gly Lys Thr Thr			
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Phe Ala Ala Ala	Ala Lys Glu Tyr	Ser Gln Asp Pro	Gly Ser Ala Asn			
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Gln Gly Gly Asp	Leu Gly Trp Ala	Thr Pro Asp Ile	Phe Asp Pro Ala			
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Phe Arg Asp Ala	Leu Thr Lys Leu	His Lys Gly Gln	Ile Ser Ala Pro			
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Val His Ser Ser	Phe Gly Trp His	Leu Ile Glu Leu	Leu Asp Thr Arg			
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Lys Val Asp Lys	Thr Asp Ala Ala	Gln Lys Asp Arg	Ala Tyr Arg Met			
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Leu Met Asn Arg	Lys Phe Ser Glu	Glu Ala Ala Thr	Trp Met Gln Glu			
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<210> 3

<211> 1287

<212> DNA

<213> Escherichia coli

<400> 3

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<210> 4

<211> 428

<212> PRT

<213> Escherichia coli

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20 25 30

Asn Asn Gly Val Val Leu Glu Ser Asp Val Asp Gly Leu Met Gln Ser
35 40 45

Val Lys Leu Asn Ala Ala Gln Ala Arg Gln Gln Leu Pro Asp Asp Ala
50 55 60

Thr Leu Arg His Gln Ile Met Glu Arg Leu Ile Met Asp Gln Ile Ile
65 70 75 80

Leu Gln Met Gly Gln Lys Met Gly Val Lys Ile Ser Asp Glu Gln Leu
85 90 95

Asp Gln Ala Ile Ala Asn Ile Ala Lys Gln Asn Asn Met Thr Leu Asp
100 105 110

Gln Met Arg Ser Arg Leu Ala Tyr Asp Gly Leu Asn Tyr Asn Thr Tyr
115 120 125

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Asn Val Asp Lys Thr Asp Ala Ala Gln Lys Asp Arg Ala Tyr Arg Met
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Leu Met Asn Arg Lys Phe Ser Glu Glu Ala Ala Ser Trp Met Gln Glu
 405 410 415

A1
Cond

Gln Arg Ala Ser Ala Tyr Val Lys Ile Leu Ser Asn
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